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Trieste, September 1, 1995

Prof. Michael Redhead Dept. of History and Philosophy of Science University of Cambridge.

## Dear Michael.

I would like to clarify, even with the purpose of avoiding to keep the editors of the Bohm's volume in a status of uncertainty, but primarily for the benefit of our friendship and of science, the disagreement we had about the status of the relativistic EPR argument. I will also make an attempt to put forward some proposals and to hear what you think of them.

However, just because we have a long friendship and I think we respect each other and since I think one has to be absolutely frank with the persons he values let me start by making clear my general (not my scientific) views about the matter.

- 1. I think that each of us has the right, and actually the duty in front of the scientific community, if misleading or wrong papers are circulated or published, to act in such a way to call attention on the mistakes and to correct them.
- 2. I think also that it may happen to each of us to write a wrong paper or an obscure paper and this does not take away his merits for the other scientific contributions he has given in his life. So it is not that I do not want to admit to be possibly mistaken the reason which motivates my comments.

Given the above I would like to state my position about the case, reversed but analogous to the one which occurred, in which I would have believed to have discovered that there was a mistake (and/or lack of clarity) in a paper of a scientist (e.g. you) with whom I have personal relations. I want to be frank on this point to make clear why I have been rather upset by the recent events. Well, in the envisaged situation, I would:

i. First of all write to him pointing out his mistake and inviting him to correct it. I would assume that he does this and that he will declare in public (i.e. in the paper he will write) my role in correcting him. In case my work to identify his mistake has been relevant and has required an appreciable effort I would contemplate the possibility of asking him to write a joint paper in which we clarify the matter.

ii. Even in the case of a scientist who I do not know personally, as soon as I decide to seriously criticize one of his works. I would immediately inform him about the matter (and not many months after - as it happened in the present case. In fact I have noticed now that the abstract of your paper has been circulated since a long time).

iii. Absolutely in general, and particularly if I would feel the necessity of making some strong statements like (pag.9 of your preprint): the authors have made "a logical blunder", I would submit my paper to a journal knowing that the editors will for sure inform the criticized author and, as it always happens with serious journals, offer him the opportunity of an answer. To publish a criticism in a book addressed to an audience that can easily include people who will not read the journal on which the possible answer of the criticized author will appear seems not appropriate to me.

Having made clear my position, I now assume (particularly from your letter) that it has been clarified that, probably due to our bad presentation, our paper could have been misleading but that our argument was basically correct and most of your criticisms had missed the point. We (Renata and myself) perfectly agree that your having pointed out the opportunity of keeping distinct the assumptions of OM-Loc and ER-Loc leads to a remarkable clarification of the logical structure of our paper. It remains, however, a crucial point on which we disagree. You claim that accepting a violation of OM-Loc is as bad, from the point of view of relativity, as accepting a violation of ER-Loc. We do not share this opinion for precise logical reasons that we are absolutely convinced are correct and that we are ready to put forward in a scientific paper.

Given the above I now see only four possible solutions to the problem. I will leave to you the choice of which one to follow:

a. You write on the Bohm's volume what you consider appropriate about our paper, you let us know the content of your article and we answer to the criticisms on the same volume so that the scientific community will have the opportunity of hearing both positions. This solution has some nice features but it has the disadvantage that it would require an immediate and timely effort on your and our part in a moment which (at least for us) involves heavy academic duties.

b. The same thing can happen but, in place of going through the Bohm's volume, it goes through a journal like, e.g., the one on which our paper was published.

c. We (Renata and myself) write a very short paper (3-4 pages) in which we declare that your sharp remarks have convinced us of the necessity of being much more precise and clear about the matter, we stress the relevance of your contribution and we present a very concise rederivation of our conclusions. We will send the paper to you for your approval before submitting it to any journal. In case you do not consider our arguments conclusive we can go on discussing and possibly (if we will come to an agreement) to decide to write a joint paper on the subject, or to go back to case b.

d. At least for the moment we leave the matter undecided. We take our time, we reconsider the problem, and successively we will keep reciprocally informed and/or agree about what actions we intend to take and we consider more appropriate for all of us.

I apologize for the delay in answering your letter. I hope my initial statements will not hurt you. Surely that was not my intention. They have been stimulated by my firm conviction that one must always be very frank and open with the persons he respects a lot and whose friendship he values.

Waiting for your comments, I remain,

Sincerely yours

GianCarlo Ghirardi